



National Institute of Standards & Technology

Certificate of Analysis

Standard Reference Material[®] 2671a

Fluoride in Freeze-Dried Urine

This Standard Reference Material (SRM) is intended primarily for use as an analytical standard for the determination of fluoride in urine. SRM 2671a consists of four bottles of freeze-dried urine, two bottles each at low and elevated levels of fluoride. The freeze-dried urine in each bottle must be reconstituted with 20 mL of distilled, deionized water before use.

The certified values for the low and elevated levels of fluoride in SRM 2671a are listed in Table 1. The values are reported as mass concentrations [1] on a reconstituted material basis.

Table 1. Certified Mass Concentrations (ρ)

Fluoride Level	ρ (in mg/L)
Low	0.55 ± 0.03
Elevated	5.7 ± 0.3

The certified values are based upon the determination of the fluoride content of samples, randomly selected from the lot, by a NIST method utilizing a fluoride ion selective electrode and the procedure of standard additions for quantitation. The certified values are the means of 16 measurements made on samples at the low level and 17 measurements of samples at the elevated level. Additional analyses, made by an independent laboratory using an ion selective electrode method and a technique using an autoanalyzer were in agreement with the certified values.

The uncertainties of the certified values are the statistical tolerance intervals, at the 95 % confidence level, for coverage of 99 % of the samples of SRM 2671a. With a 95 % confidence, the fluoride concentration in at least 99 % of the samples of this SRM should be included in all of the above intervals.

The analytical measurements leading to certification were made at NIST by W.F. Koch and J.W. Stolz of the NIST Analytical Chemistry Division.

The overall direction and coordination of technical measurements leading to certification were performed by E.L. Garner former Chief, Inorganic Analytical Research Division.

The technical and support aspects involved in the original preparation, certification, and issuance of this SRM were coordinated through the Standard Reference Materials Program by T.E. Gills. Revision of this certificate was coordinated through the Standard Reference Materials Program by J.C. Colbert.

This Certificate of Analysis has undergone editorial revision to reflect program and organizational changes at NIST and at the Department of Commerce. No attempt was made to reevaluate the certificate values or any technical data presented on this certificate.

Gaithersburg, MD 20899
August 28, 1995
(Revision of certificate dated 12-29-82)

Thomas E. Gills, Chief
Standard Reference Materials Program

NOTICE AND WARNINGS TO USERS

Storage: It is recommended that SRM 2671a be stored under refrigeration (4 °C) or under freezer conditions (-20 °C) for longer term storage.

Expiration of Certification: This certification is valid for five years from the date of shipment from NIST. Should any of the certified values change before the expiration of the certification, purchasers will be notified by NIST. Return of the attached registration card will facilitate notification.

Use: To achieve the certified concentrations, the freeze-dried urine must be reconstituted by the addition of 20 mL of distilled, deionized water to each bottle. The water used should be free of fluoride ion or suitable blank corrections should be made for its fluoride content. The reconstituted material may be considered as fresh urine and should be handled with the same precautions as fresh urine. When reconstituted, the mass density of SRM 2671a is $1.0117 \text{ g/mL} \pm 0.0002 \text{ g/mL}$ at 23 °C.

REFERENCE

- [1] Taylor, B.N., Guide for the Use of the International System of Units (SI), NIST Special Publication 811, 1995 Ed., (April 1995).